Educational Topic 50: Gestational Trophoblastic Neoplasia (GTN)

Rationale: Early recognition and proper management of molar pregnancy can reduce morbidity and mortality associated with gestational trophoblastic neoplasia.

Intended Learning Outcomes:

A student should be able to:

- Describe the symptoms and physical examination findings of a patient with GTN including molar pregnancy
- Describe the diagnostic methods, treatment options and follow-up for GTN including molar pregnancy
- Recognize the difference between molar pregnancy and malignant GTN

TEACHING CASE

CASE: A 15-year-old primigravida presents for routine prenatal care. She is 14 weeks pregnant by last menstrual period. She has some nausea but otherwise feels well. The pregnancy to date has been unremarkable. She has support from her parents and the father of the baby.

The uterus is enlarged, measuring 20 cm from the pubic symphysis. Fetal heart tones are not auscultated by Doppler. She denies vaginal bleeding or passage of tissue from the vagina. Vaginal exam is unremarkable.

Routine prenatal labs were unremarkable. She is Rh-positive. Quantitative beta hCG levels were markedly elevated at 112,320 mIU/ml. TSH was low and further thyroid testing revealed the patient to be mildly hyperthyroid.

Ultrasound showed the uterus to be enlarged, with multiple internal echoes and a "snow storm" appearance. No fetus is noted. Ultrasound also showed enlarged multi-loculated ovarian cysts bilaterally.

COMPETENCY-BASED DISCUSSION & KEY TEACHING POINTS:
Competencies addressed:
- Patient Care
- Medical Knowledge
- Systems Based Practice
1. What is the differential diagnosis prior to receiving your ultrasound result?
   - Poor dates, most likely if the patient’s menses are irregular
   - Multiple gestation
   - Molar pregnancy (complete or partial)

2. What aspects of the ultrasound guide the diagnosis?
   - Ultrasound will evaluate the abnormal placental appearance of molar pregnancy and the presence (partial molar pregnancy) or absence of an associated fetus (complete molar pregnancy)
   - Ultrasound will also reveal any associated ovarian enlargement.

3. What evaluation do you need to make a final diagnosis?
   - Although ultrasound can diagnose gestational trophoblastic neoplasia; pathology is needed to confirm the diagnosis with or without malignant change
   - A chest x-ray is recommended prior to uterine evacuation to diagnose the likelihood of metastatic disease.
   - In this context ultrasound is diagnostic of bilateral theca lutein cysts (no ovarian tissue is needed for this diagnosis)

4. What is the epidemiology and clinical course of this condition?
   - Gestational trophoblastic neoplasia is the most curable gynecological malignancy.
   - Although patients with hydatidiform mole are classically described as having a uterus that is large for dates, this only occurs in approximately half of the patients.
   - Molar pregnancies are more likely to occur in women 15-years-old or less, or 40-years-old and greater.
   - Ethnicity: Asian women are almost twice as likely to develop GTN as women of other ethnic groups.
   - Gestational trophoblastic neoplasia is frequently associated with hyperthyroidism due to the release of a thyrotropin-like compound by the molar tissue.
   - Patients with molar pregnancy have increased risk of trophoblastic disease in later pregnancies (recurrence rate is 1%) and should have early ultrasound in every subsequent pregnancy.

5. What is your management plan?
   - Primary treatment is suction evacuation of the uterus.
   - Beta hCG’s should be followed regularly until negative, i.e. weekly until negative and then monthly for six months to a year.
   - As patients with gestational trophoblastic neoplasia should not attempt subsequent pregnancy until after this time period, reliable contraception use needs to be discussed and implemented.
   - If beta hCG does not rapidly decrease, consideration of post molar GTN must be considered. Methotrexate would be appropriate as secondary treatment.
   - Thyroid function should also be followed until normalized.
   - Chest x-ray and pelvic examination for uterine enlargement should be followed to rule out choriocarcinoma and to document the resolution of the ovarian cysts.
REFERENCES


ACOG Practice Bulletin 53, Diagnosis and Treatment of Gestational Trophoblastic Disease, June 2004 (reaffirmed 2012).